

Title (en)

FORMING FENCE CONDUCTORS IN AN INTEGRATED CIRCUIT

Title (de)

HERSTELLUNG VON UMFRIEDUNGSLEITERN IN EINEM INTEGRIERTEN SCHALTkreis

Title (fr)

FORMATION DE CONDUCTEURS EN BARRIÈRE DANS UN CIRCUIT INTÉGRÉ

Publication

EP 2973678 B1 20210428 (EN)

Application

EP 14710753 A 20140301

Priority

- US 201313838784 A 20130315
- US 2014019729 W 20140301

Abstract (en)

[origin: US8836128B1] A spacer etching process produces ultra-narrow conductive lines in a plurality of semiconductor dice. Sub-lithographic patterning of the conductive lines are compatible with existing aluminum and copper backend processing. A first dielectric is deposited onto the semiconductor dice and trenches are formed therein. A conductive film is deposited onto the first dielectric and the trench surfaces. All planar conductive film is removed from the faces of the semiconductor dice and bottoms of the trenches, leaving only conductive films on the trench walls, whereby "fence conductors" are created therefrom. Thereafter the gap between the conductive films on the trench walls are filled in with insulating material. A top portion of the insulated gap fill is thereafter removed to expose the tops of the fence conductors. Portions of the fence conductors and surrounding insulating materials are removed at appropriate locations to produce desired conductor patterns comprising isolated fence conductors.

IPC 8 full level

H01L 21/768 (2006.01)

CPC (source: EP US)

H01L 21/76814 (2013.01 - US); **H01L 21/76838** (2013.01 - EP US); **H01L 21/76877** (2013.01 - EP US)

Designated contracting state (EPC)

AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

DOCDB simple family (publication)

US 2014264891 A1 20140918; US 8836128 B1 20140916; CN 105051883 A 20151111; CN 105051883 B 20200609; EP 2973678 A1 20160120; EP 2973678 B1 20210428; KR 20150132213 A 20151125; TW 201448116 A 20141216; TW I619202 B 20180321; WO 2014149580 A1 20140925

DOCDB simple family (application)

US 201313838784 A 20130315; CN 201480014820 A 20140301; EP 14710753 A 20140301; KR 20157026961 A 20140301; TW 103108550 A 20140312; US 2014019729 W 20140301